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10/645,384

08/21/2003

Thomas Weiss

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EXAMINER

TALBOT, BRIAN K

ART UNIT

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1762

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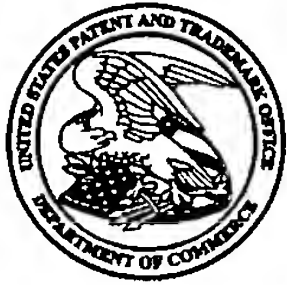
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/645,384  
Filing Date: August 21, 2003  
Appellant(s): WEISS ET AL.

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Peter Peterson  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed June 11, 2007 appealing from the Office action mailed January 17, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

**WITHDRAWN REJECTIONS**

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner.

Upon further review of the application, the rejections concerning Brooks (6,915,928) and Bryning et al. (2001/0009136) have been withdrawn. All arguments regarding these two withdrawn references will not be addressed.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,186,982	Blette et al.	2-1993
6,775,879	Bibeault et al.	8-2004
20030119193	Hess et al.	6-2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

Claims 1,3-11 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982).

Blette et al. (5,186,982) teaches a pin transfer applicator and method whereby dispensing small quantities of liquid material onto a workpiece. The assembly includes an applicator having a pin moveable along a passageway from a retracted position to an extended position. As the pin moves to the extended position, a forward end of the pin picks up a small dot of liquid material and carries the dot to a position external of the housing of the applicator and into contact with a workpiece. The pin is retracted and a dot remains on the workpiece (abstract). The applicator includes a housing (12), a pressure chamber (14) and a passageway (16) that leads from the chamber to the housing. A pin (22) is located in the passageway in communication with the passageway and the reservoir of liquid material (36). The retraction of the pin (22) deposits liquid material on the workpiece and a portion remains on the end of the pin (22). The liquid material is solder paste. Blette et al. (5,186,982) depicts a sliding seal being created between the

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punch and the orifice, i.e. the pin being substantially the same size of the passageway (see Figures and (col. 3, lines 48-52). Regarding the pressurized chamber, Blette et al. (5,186,982) teaches the reservoir being pressurized (col. 3, line 33 – col. 4, line 50). Regarding the claims 10 and repeating the process, Blette et al. (5,186,982) teaches this (col. 6, lines 20-25).

Blette et al. (5,186,982) fails to positively recite the retracting step until the punch face is substantially coplanar with the orifice member.

While the Examiner acknowledges this fact, Blette et al. (5,186,982) teaches a retracted (Fig. 1) and depositing position (Fig. 2) and therefore the punch face would be substantially coplanar with the orifice twice between the retracted and deposition positions, i.e. from the retracted to the deposited and again from the deposited to the retracted.

With respect to claims 14-16 and 19 which recite controlling and/or adjusting the spacing/distance of the punch from the orifice to control the shape/amount of deposited material. Blette et al. (5,186,982) all teach some sort of “controlling mechanism” to ensure proper dispensing of the liquid material. Therefore, it is the Examiner’s position that one skilled in the art at the time the invention was made would have had a reasonable expectation of achieving similar results with the claimed controlling mechanisms as it has been well settled that the mere substitution of one well known process for another that performs the same function would be obvious without the showing of unexpected results garner therefrom. Furthermore, Blette et al. (5,186,982) teaches controlling the dot volume by varying the time that the pin is above the reservoir outlet (col. 4, lines 5-15).

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Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982) in combination with Bibeault et al. (6,775,879).

Features described above concerning the teachings of Blette et al. (5,186,982) are incorporated here.

Blette et al. (5,186,982) fail to teach cleaning the pin to remove residual coating material.

Bibeault et al. (6,775,879) teaches a needle cleaning system utilized for liquid dispensing systems that dispenses a quantity of material through a dispensing needle or transfer pin process (abstract).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified either pin process of Blette et al. (5,186,982) to incorporate a pin cleaning step as evidenced by Bibeault et al. (6,775,879) with the advantages of maintaining a clean pin for controlling the desired proper dispensing material.

Claims 20,22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982) in combination with Hess et al. (2003/0119193).

Blette et al. (5,186,982) fail to teach a calibrating step of measuring the size of the droplets.

Hess et al. (2003/0119193) teaches a system and method for high throughput screening of droplets. The size of the droplet dispensed or other characteristics of the droplet is measured and parameters of the dispenser can be adjusted accordingly. Calibration of numerous droplets can be measure to include variance and standard deviation of the droplets ([0112-0113]).

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Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Blette et al. (5,186,982) dispensing process by including a calibration step as evidenced by Hess et al. (2003/0119193) with the expectation of maintaining a properly dispensed dot.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982) in combination with Hess et al. (2003/0119193) further in combination with Bibeault et al. (6,775,879).

Features described above concerning the teachings of Blette et al. (5,186,982) are incorporated here.

Blette et al. (5,186,982) in combination with Hess et al. (2003/0119193) fail to teach cleaning the pin to remove residual coating material.

Bibeault et al. (6,775,879) teaches a needle cleaning system utilized for liquid dispensing systems that dispenses a quantity of material through a dispensing needle or transfer pin process (abstract).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified either pin process of Blette et al. (5,186,982) in combination with Hess et al. (2003/0119193) to incorporate a pin cleaning step as evidenced by Bibeault et al. (6,775,879) with the advantages of maintaining a clean pin for controlling the desired proper dispensing material.

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Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blette et al. (5,186,982) in combination with Banno et al. (6,761,925) or Speakman (6,503,831).

Features described above concerning the teachings of Blette et al. (5,186,982) are incorporated here.

Blette et al. (5,186,982) fails to teach forming a line or filling a via.

Banno et al. (6,761,925) or Speakman (6,503,831) both teach using droplet deposition techniques to form circuit lines within a via (abstract and Figures).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified either pin process of Blette et al. (5,186,982) to form a line or fill a via as evidenced by Banno et al. (6,761,925) or Speakman (6,503,831) with the expectation of achieving similar success.

#### **(10) Response to Argument**

Appellant argued that Blette et al. (5,186,982) fails to teach at the retraction of the punch to be coplanar, orifice member having first and second surfaces and a pressurized chamber.

The Examiner disagrees. The limitation regarding retraction of punch surface to be coplanar with the orifice and the pressurized chamber have has been addressed above.

Regarding the first and second surfaces, Blette et al. (5,186,982) teaches a passageway (16) which has a first and second surface with a bore therethrough. In addition, the inlet (40) also maintains a first and second surface with a bore therethrough. The claims are broad enough for these limitations to be met by the Blette et al. (5,186,982) reference.



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Appellant argued that Bibeault et al. (6,775,879) teaches a needle cleaning step over a cleaning orifice and not in the retracted coplanar state.

While the Examiner acknowledges this fact, it is the Examiner's position that one skilled in the art would be suggested to clean the pin/punch after deposition and prior to retracting within the orifice so as prevent clogging. Hence, the cleaning would be done either outside of the coplanar state or at the coplanar state. It is the Examiner's position that this combination would suggest to one skilled in the art to either position with that expectation of achieving similar success, i.e. prevent clogging.

Applicant argued Banno et al. (6,761,925) or Speakman (6,503,831) while teaching forming circuit line in vias, fails to teach the claimed coating material and substrate.

While the Examiner acknowledges this fact, it is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of achieving similar success regardless of the coating material or substrate utilized. If applicant disagrees and can provide criticality concerning the materials, the Examiner will reconsider his position.

Appellant argued that Hess et al. (2003/0119193) fails to teach calibration based on adjusting the parameters.

The Examiner disagrees as detailed above Hess et al. (2003/0119193) teaches a feedback control loop with calibration of the droplets based on the size of the droplets.

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Appellant argued that the prior art fails to teach “sealing” the bore and the chamber when the punch is retracted.

This has been addressed above where Blette et al. (5,186,982) depicts a sliding seal being created between the punch and the orifice, i.e. the pin being substantially the same size of the passageway (see Figures and (col. 3, lines 48-52). The punch being the same size of the passageway would meet the limitation of “sealing”.

Appellant argued that the prior art fails to teach repeating the process.

The Examiner disagrees as Blette et al. (5,186,982) teaches repeating the process (col. 6, lines 20-25).

Appellant argued that the prior art fails to teach adjusting the spacing of the punch face to adjust the desired amount of material.

The Examiner disagrees. As detailed above, Blette et al. (5,186,982) controlling the amount of coating material by controlling the time that the punch is above the inlet (40) while the coating material is being supplied in the passageway (16). It is the Examiner’s position that the amount of material dispensed would be a matter of design choice of one skilled in the art and would be optimized by controlling the result effective variables such as time, distance, speed, etc. of the punch face in relationship to the coating material.

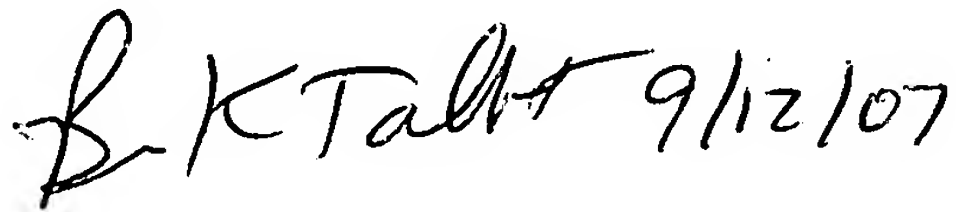
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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

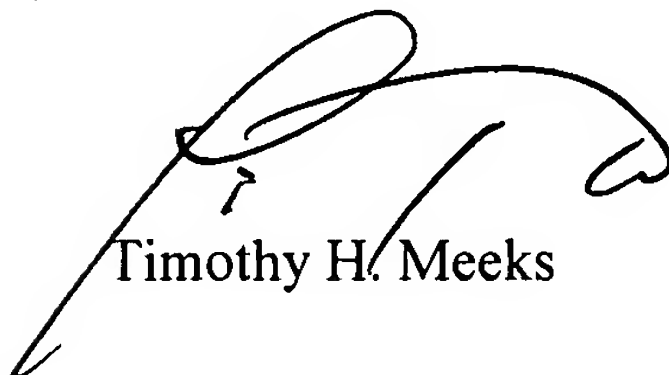
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Handwritten signature of Brian K. Talbot, dated 9/12/07.

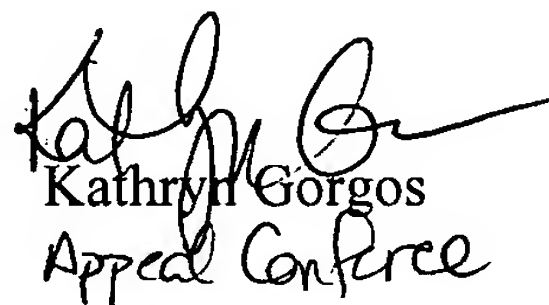
Brian K. Talbot

Conferees:

Handwritten signature of Timothy H. Meeks.

Timothy H. Meeks

**TIMOTHY MEEKS**  
**SUPERVISORY PATENT EXAMINER**

Handwritten signature of Kathryn Gorgos, dated 9/12/07.

Kathryn Gorgos  
Appeal Conference